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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/637,456	08/11/2000	Timothy J. Van Hook	0007057-0013/000123 B S	7981

23600 7590 08/15/2003

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EXAMINER	
LE, BRIAN Q	

ART UNIT	PAPER NUMBER
2623	

DATE MAILED: 08/15/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/637,456	HOOK, TIMOTHY J. VAN	
	Examiner	Art Unit	
	Brian Q Le	2623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-13* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-11* is/are rejected.

7)☒ Claim(s) *12 and 13* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *11 August 2000* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

Drawings

1. The drawings are objected to because the term "LTE" of FIG. 1, box 102 is unclear. The Examiner suggests the Applicant to change this as follow "compressed tile ≤ uncompressed tile". A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Bhargava U.S. Patent No. 5,471,248 and Jung U.S. Patent No. 5,805,226.

Regarding claim 1, Bhargava teaches a method of compressing data in a graphics processing system (column 2, lines 15-23) comprising:

Defining a plurality of tiles of data (column 2, lines 32-36);

Defining a tile format table (FIG. 13 A) containing a status entry (header information) for each for each of said plurality of tiles (column 10, lines 10-17);

Setting said status entry for said compressed tile in said tile format table (column 13, lines 30-45);

Storing said compressed tile in a memory (column 4, lines 20-22 and column 16, lines 22-25, 30-37).

Bhargava does not teach the concept of determine the selection of the compressed tile if the compressed tile is smaller than the uncompressed tile. Jung discloses a method of encoding (compress) blocks of video signal included frames that divided into blocks (tile) (Abstract, first 4 lines) and determining (FIG. 2, element 400) whether to select (FIG. 2, 500) the compressed tile (FIG. 2, element 300) over the uncompressed tile if the compressed tile is smaller than the uncompressed tile (column 4, lines 62-67 and column 5, lines 1-2). Modifying Bhargava's method of compressing data in a graphics processing system according to Jung would able to choose the smaller data size between the compressed and uncompressed tile to reduce the information contained in the video signal and thus free the bandwidth (column 5, lines 17-22). This would improve processing and therefore, it would have been obvious to one of the ordinary skill in the art to modify Bhargava according to Jung.

For claim 2, Bhargava teaches a method wherein said compression is lossless (Huffman) (column 13, line 14 and FIG. 12, element 120).

Referring to claim 3, Bhargava discloses the method wherein each of said tiles comprises a cache line (A computer inherently has a cache line) (column 8, lines 50-55).

Regarding claim 4, Bhargava teaches the method wherein tiles read from said memory are decompressed (FIG. 6 and column 8, lines 62-67) when said status bit (header information bit) indicates that said tile is a compressed tile (FIG. 13 A).

Regarding claim 5, please refer back to claim 1 for the explanation.

For claim 6, Bhargava teaches the method wherein each compressed tile is compressed using one of a plurality of compression methods (Huffman) (column 13, line 14 and FIG. 12, element 120).

Regarding claim 7, Bhargava teaches the method wherein each compressed tile includes a value identifying the compression of said plurality of compression methods used to compress said compressed tile (FIG. 13 A and column 7, lines 50-60).

For claim 8, Bhargava teaches the method wherein each tile is comprised of pixels having pixel color components (RGB pixels) (column8, lines 15-16 and column 12, lines 10-15).

Regarding claim 9, Bhargava teaches the method wherein one of said compression methods comprises entropy encoded (Huffman coding) (column 13, line 14) differences between adjacent pixel color (as mentioned in claim 8) components (column 5, lines 23-33).

For claim 10, Bhargava teaches the method in which the assignment of entropy encodes per tile (column 13, lines 10-15) is based on the frequency of occurrence (calculate the repeated cycle) (column 5, lines 33-34) of difference values (column 5, lines 34-36) within said tile (Also, one skilled in the art would know this is the definition of entropy coding).

Regarding claim 11, Bhargava teaches the method in which multiple component difference codes (pixel intensities convert into a single value) are combined into a single code per pixel (column 4, lines 65-67).

Allowable Subject Matter

4. Claims 12 and 13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

CONCLUSION

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The following patents are cited to further show the state of the art with respect to tile compression and decompression:

U.S. Pat. No. 6,081,209 to Schuyler, teaches search system for use in compression.

U.S. Pat. No. 6,400,763 to Wee, teaches compression system which re-uses prior motion vectors.

U.S. Pat. No. 6,005,624 to Vainsencher, teaches system and method for performing motion compensation using a skewed tile storage format for improved efficiency.

U.S. Pat. No. 5,486,826 to Remillard, teaches method for iterative compression of digital data.

U.S. Pat. No. 6,018,366 to Asai, teaches video coding and decoding system.

U.S. Pat. No. 6,081,209 to Bobick, teaches image data compression and decompression.

U.S. Pat. No. 6,360,019 to Chaddha, teaches table-based compression with embedded coding.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian Q Le whose telephone number is 703-305-5083. The examiner can normally be reached on 8:30 A.M - 5:30 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amelia Au can be reached on 703-308-6604. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to TC Customer Service whose telephone number is 703-306-0377.

BL
August 1, 2003

AMELIA M. AU
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600